

SEQUENCE LISTING

<110> Wei, Xin
 Gariepy, Jean
 <120> LIBRARY OF TOXIN MUTANTS, AND METHODS OF USING SAME
 <130> 34104-0082
 <160> 7
 <170> PatentIn version 3.2
 <210> 1
 <211> 299
 <212> PRT
 <213> Escherichia coli
 <220>
 <221> misc_feature
 <223> Wild type SLT-1 A chain
 <400> 1
 Ile Glu Gly Arg Ala Ser Lys Glu Phe Thr Leu Asp Phe Ser Thr Ala
 1 5 10 15
 Lys Thr Tyr Val Asp Ser Leu Asn Val Ile Arg Ser Ala Ile Gly Thr
 20 25 30
 Pro Leu Gln Thr Ile Ser Ser Gly Gly Thr Ser Leu Leu Met Ile Asp
 35 40 45
 Ser Gly Ser Gly Asp Asn Leu Phe Ala Val Asp Val Arg Gly Ile Asp
 50 55 60
 Pro Glu Glu Gly Arg Phe Asn Asn Leu Arg Leu Ile Val Glu Arg Asn
 65 70 75 80
 Asn Leu Tyr Val Thr Gly Phe Val Asn Arg Thr Asn Asn Val Phe Tyr
 85 90 95
 Arg Phe Ala Asp Phe Ser His Val Thr Phe Pro Gly Thr Thr Ala Val
 100 105 110
 Thr Leu Ser Gly Asp Ser Ser Tyr Thr Thr Leu Gln Arg Val Ala Gly
 115 120 125
 Ile Ser Arg Thr Gly Met Gln Ile Asn Arg His Ser Leu Thr Thr Ser
 130 135 140

Tyr Leu Asp Leu Met Ser His Ser Gly Thr Ser Leu Thr Gln Ser Val
 145 150 155 160

Ala Arg Ala Met Leu Arg Phe Val Thr Val Thr Ala Glu Ala Leu Arg
 165 170 175

Phe Arg Gln Ile Gln Arg Gly Phe Arg Thr Thr Leu Asp Asp Leu Ser
 180 185 190

Gly Arg Ser Tyr Val Met Thr Ala Glu Asp Val Asp Leu Thr Leu Asn
 195 200 205

Trp Gly Arg Leu Ser Ser Val Leu Pro Asp Tyr His Gly Gln Asp Ser
 210 215 220

Val Arg Val Gly Arg Ile Ser Phe Gly Ser Ile Asn Ala Ile Leu Gly
 225 230 235 240

Ser Val Ala Leu Ile Leu Asn Cys His His His Ala Ser Arg Val Ala
 245 250 255

Arg Met Ala Ser Asp Glu Phe Pro Ser Met Cys Pro Ala Asp Gly Arg
 260 265 270

Val Arg Gly Ile Thr His Asn Lys Ile Leu Trp Asp Ser Ser Thr Leu
 275 280 285

Gly Ala Ile Leu Met Arg Arg Thr Ile Ser Ser
 290 295

<210> 2
 <211> 32
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

<400> 2
 gttactgtga cagctgaagc tttagctttt cg

32

<210> 3
 <211> 31
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

<400> 3
gagaagaaga gactgcagat tccatctgtt g

31

<210> 4
<211> 302
<212> PRT
<213> Artificial

<220>
<223> SLT-1 A Chain lib#3 protein sequence (SAM3)

<400> 4

Lys Gly Met Arg Ser His His His His His His His Ile Glu Gly
1 5 10 15

Arg Ala Ser Lys Glu Phe Thr Leu Asp Phe Ser Thr Ala Lys Thr Tyr
20 25 30

Val Asp Ser Leu Asn Val Ile Arg Ser Ala Ile Gly Thr Pro Leu Gln
35 40 45

Thr Ile Ser Ser Gly Gly Thr Ser Leu Leu Met Ile Asp Ser Gly Ser
50 55 60

Gly Asp Asn Leu Phe Ala Val Asp Val Arg Gly Ile Asp Pro Glu Glu
65 70 75 80

Gly Arg Phe Asn Asn Leu Arg Leu Ile Val Glu Arg Asn Asn Leu Tyr
85 90 95

Val Thr Gly Phe Val Asn Arg Thr Asn Asn Val Phe Tyr Arg Phe Ala
100 105 110

Asp Phe Ser His Val Thr Phe Pro Gly Thr Thr Ala Val Thr Leu Ser
115 120 125

Gly Asp Ser Ser Tyr Thr Thr Leu Gln Arg Val Ala Gly Ile Ser Arg
130 135 140

Thr Gly Met Gln Ile Asn Arg His Ser Leu Thr Thr Ser Tyr Leu Asp
145 150 155 160

Leu Met Ser His Ser Gly Thr Ser Leu Thr Gln Ser Val Ala Arg Ala
165 170 175

Met Leu Arg Phe Val Thr Val Thr Ala Glu Ala Leu Arg Phe Arg Gln

180 185 190
 Ile Gln Arg Gly Phe Arg Thr Thr Leu Asp Asp Leu Ser Gly Arg Ser
 195 200 205
 Tyr Val Met Thr Ala Glu Asp Val Asp Leu Thr Leu Asn Trp Gly Arg
 210 215 220
 Leu Ser Ser Val Leu Pro Asp Tyr His Gly Gln Asp Ser Val Arg Val
 225 230 235 240
 Gly Arg Ile Ser Phe Gly Ser Ile Asn Ala Ile Leu Gly Ser Val Ala
 245 250 255
 Leu Ile Leu Asn Cys His His His Ile Tyr Ser Asn Lys Leu Met Ala
 260 265 270
 Ser Arg Val Ala Arg Met Ala Ser Asp Glu Phe Pro Ser Met Cys Pro
 275 280 285
 Ala Asp Gly Arg Val Arg Gly Ile Thr His Asn Lys Ile Leu
 290 295 300
 <210> 5
 <211> 319
 <212> PRT
 <213> Artificial
 <220>
 <223> SLT-1 A Chain lib#5 protein sequence (SAM5)
 <400> 5
 Lys Gly Met Arg Ser His His His His His His His Ile Glu Gly
 1 5 10 15
 Arg Ala Ser Lys Glu Phe Thr Leu Asp Phe Ser Thr Ala Lys Thr Tyr
 20 25 30
 Val Asp Ser Leu Asn Val Ile Arg Ser Ala Ile Gly Thr Pro Leu Gln
 35 40 45
 Thr Ile Ser Ser Gly Gly Thr Ser Leu Leu Met Ile Asp Ser Gly Ser
 50 55 60
 Gly Asp Asn Leu Phe Ala Val Asp Val Arg Gly Ile Asp Pro Glu Glu
 65 70 75 80

Gly Arg Phe Asn Asn Leu Arg Leu Ile Val Glu Arg Asn Asn Leu Tyr
 85 90 95
 Val Thr Gly Phe Val Asn Arg Thr Asn Asn Val Phe Tyr Arg Phe Ala
 100 105 110
 Asp Phe Ser His Val Thr Phe Pro Gly Thr Thr Ala Val Thr Leu Ser
 115 120 125
 Gly Asp Ser Ser Tyr Thr Thr Leu Gln Arg Val Ala Gly Ile Ser Arg
 130 135 140
 Thr Gly Met Gln Ile Asn Arg His Ser Leu Thr Thr Ser Tyr Leu Asp
 145 150 155 160
 Leu Met Ser His Ser Gly Thr Ser Leu Thr Gln Ser Val Ala Arg Ala
 165 170 175
 Met Leu Arg Phe Val Thr Val Thr Ala Glu Ala Leu Arg Phe Arg Gln
 180 185 190
 Ile Gln Arg Gly Phe Arg Thr Thr Leu Asp Asp Leu Ser Gly Arg Ser
 195 200 205
 Tyr Val Met Thr Ala Glu Asp Val Asp Leu Thr Leu Asn Trp Gly Arg
 210 215 220
 Leu Ser Ser Val Leu Pro Asp Tyr His Gly Gln Asp Ser Val Arg Val
 225 230 235 240
 Gly Arg Ile Ser Phe Gly Ser Ile Asn Ala Ile Leu Gly Ser Val Ala
 245 250 255
 Leu Ile Leu Asn Cys His His His Ala Ala Phe Ala Asp Ile Ile Ala
 260 265 270
 Ser Arg Val Ala Arg Met Ala Ser Asp Glu Phe Pro Ser Met Cys Pro
 275 280 285
 Ala Asp Gly Arg Val Arg Gly Ile Thr His Asn Lys Ile Leu Trp Asp
 290 295 300
 Ser Ser Thr Leu Gly Ala Ile Leu Met Arg Arg Thr Ile Ser Ser
 305 310 315

<210> 6
<211> 7
<212> PRT
<213> Artificial

<220>
<223> First melanoma active insert
<400> 6

Ile Tyr Ser Asn Lys Leu Met
1 5

<210> 7
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Second melanoma active insert
<400> 7

Ala Ala Phe Ala Asp Leu Ile
1 5